



Rock Fracture Knowledgebase in teaching structural geology and related advanced courses

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The Rock Fracture Knowledgebase is a repository of information about rock fracturing and the resulting structures. It is an Internet-based tool and can be utilized in teaching Structural Geology and related advanced courses. Its content is stored in a Web Ontology Language (OWL) file. The OWL file is then translated and formatted to individual web pages by Extensible Stylesheet Language Transformations (XSLT). Protégé, a free open-source ontology editor by Stanford Medical School, is used to edit the web pages.

The Rock Fracture Knowledgebase contains four major classes of structures: Joints, Faults, Pressure Solution Seams, and Deformation Bands. The classes are organized based on hierarchical tree structure, starting from the Home page and branching off to more specific ones linked by hyperlinks. For example, 'Home page' -> 'Fractures' -> 'Faults' -> 'Shear Bands' -> etc... There are also hyperlinks that connect related structure classes. For example, the class 'Shear Band' Faults links to 'Mechanisms and Mechanics of Shear Bands' and 'Petrophysical Properties of Shear Bands'. Readers can chose the path of navigation, traverse the tree, follow the related links, or jump directly to other concepts of interest from a highly extensive list in the 'Table of Contents'.

The Rock Fracture Knowledgebase is completely digital and accessible on the Internet by computers, tablets, and smart phones. Comparing to traditional printed books with chapters, the Knowledgebase consists of classes in the form of shorter individual web pages covering the concepts with virtually unlimited text, illustrations, and references.